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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/016,619	12/06/2001	Stephen C. Netemeyer	PM 2000.062	6577

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EXAMINER
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PROCTOR, JASON SCOTT

ART UNIT	PAPER NUMBER
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2123

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	04/09/2007	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

## Office Action Summary

Application No.

10/016,619

Applicant(s)

NETEMEYER ET AL.

Examiner

Jason Proctor

Art Unit

2123

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 26 January 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-4, 6-13, 16-20 and 22-27 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-4, 6-9 and 24-27 is/are rejected.
- 7) ☒ Claim(s) 10-13, 16-20, 22 and 23 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 06 December 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date 1/26/07.

- 4) ☒ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. 20070328.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

### **DETAILED ACTION**

Claims 1-13 and 16-28 were rejected in the Office Action of 27 July 2006.

Applicants' response submitted on 26 January 2007 has amended claims 1-4, 6, 7, 10, 13, 16, 18, 20, 22, 24, 25, and 27; and cancelled claims 5, 21, and 28.

Claims 1-4, 6-13, 16-20, and 22-27 are pending in this application.

Claims 1-4, 6-9, and 24-27 are rejected.

#### ***Claim Objections***

The previous objections to claims 5 and 18 are withdrawn in response to the amendments and response filed on 26 January 2006.

1. Claim 10 is objected to because of the following informalities: Claim 10 appears to omit a comma in the phrase "the model named attribute types-- and the first set" in line 9.
2. Claim 10 is objected to because of the following informalities: The language "properties of the one of the facilities" in line 16 appears to contain a grammatical error.
3. Claim 11 is objected to because of the following informalities: The phrase "the facility network configured to exchange fluids with at least one other part of the simulation model" is presumed to mean "the facility network configured to --simulate the-- exchange --of-- fluids with at least one other part of the simulation model."
4. Claim 13 is objected to because of the following informalities: The claim language is confusing and would be improved by reciting: "a data definitions file defines model facility types

based on a first set of generic classes and –defines– model named attribute types based on a second set of generic classes–,– with the first set of generic classes” in lines 15-17.

5. Claim 16 is objected to because of the following informalities: The language “the addition of additional model facility types ... do not modify the class hierarchy” in lines 10-12 appears to contain a grammatical error. Replacing the word “do” with “does” appears to be correct in this circumstance.

6. Claim 18 is objected to because of the following informalities: The language “one or more types of surface flowlines, manifolds, separators, valves, pumps, compressors” lacks a required connecting word “and” or “or”.

7. Claim 25 is objected to because of the following informalities: The language “one or more types of surface flowlines, manifolds, separators, valves, pumps, compressors” lacks a required connecting word “and” or “or”.

Appropriate correction is required.

#### ***Claim Interpretation***

The claim interpretations provided in the Office Action of 27 July 2006 are not believed to be relevant to the claims as currently amended.

#### ***Claim Rejections - 35 USC § 101***

The previous rejection of claims 1-9 under 35 U.S.C. § 101 is withdrawn in response to the amendments to the claims.

35 U.S.C. § 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

8. Claims 1-4 and 6-9 are rejected under 35 U.S.C. § 101 because the claimed invention is directed to non-statutory subject matter.

MPEP 2106, quoting *State Street*, explains that:

The question of whether a claim encompasses statutory subject matter should not focus on which of the four categories of subject matter a claim is directed to [...] but rather on the essential characteristics of the subject matter, in particular, its practical utility.

Claim 1 recites “a computer system” comprising a processor, memory, and an object-oriented software product. The majority of the claim language describes a method that would be performed by the software product if it were executed. The method performed by the software is regarded as the essential characteristics of the subject matter for the following reasons:

A “computer system” defined as comprising a processor, memory, and software is well known in the software and does not appear to be the object of Applicants’ invention.

The detailed limitations of the claim are directed entirely to the method performed by the software.

The allowable subject matter resides in the details of the method performed by the software.

Applicants submit method claims that substantially correspond to the method performed by the software in claim 1. Those method claims are presumed to contain the essential characteristics of the subject matter.

Therefore, in order for claim 1 to be limited to statutory subject matter, the method performed by the software must be limited to statutory subject matter. However, the method performed by the subject matter lacks a practical application. In particular, the method lacks a useful, concrete, and tangible result.

Claim 1 produces “facility instances ... and named attribute instances ... wherein facility instances and named attributes are stored in memory and coupled in a facility network to simulate transport phenomenon.” Claim 1 stops short of reciting a step of performing a simulation, in contrast to claims 10, 13, 16, and 24. Claim 1 requires only the creation of “facility instances” and “named attribute instances” which are not, in isolation, a useful result. Only when these intermediary results are employed in a simulation or a step of simulating does there exist a practical application.

To overcome this rejection, the claim may be amended to recite a step of simulating, substantially in accordance with claims 10, 13, 16, and 24.

Claims 2-4 and 6-9 stand rejected by virtue of their dependence.

9. Claims 24-27 are rejected under 35 U.S.C. § 101 because the claimed invention is directed to non-statutory subject matter.

Claim 24 recites “a reservoir modeling system comprising a computer-readable medium encoded with instructions” and provides limitations related to those instructions. Claim 24 therefore defines non-functional descriptive material stored on a computer-readable medium, which is non-statutory. The scope of claim 24 encompasses, for example, plain text *instructions*, written in English, describing the method specified by the claim.

To overcome this rejection, the claim may be amended to specify that the instructions are executable by a computer system, and when the instructions are executed by a computer system perform the method described by the claim.

Claims 25-27 stand rejected by virtue of their dependence.

To expedite a complete examination of the instant application the claims rejected under 35 U.S.C. § 101 (nonstatutory) above are further rejected as set forth below in anticipation of applicant amending these claims to place them within the four statutory categories of invention.

***Claim Rejections - 35 USC § 112***

The previous rejections of claims 1-9 and 13 under 35 U.S.C. § 112, first paragraph, as failing to comply with the enablement requirement are withdrawn in response to the amendments to these claims. In particular, the independent claims all recite a “data definition file” and related limitations that overcome the previous grounds of rejection.

The previous rejection of claim 21 under 35 U.S.C. § 112, second paragraph, as being indefinite is withdrawn in response to the cancellation of that claim.

The following is a quotation of the second paragraph of 35 U.S.C. § 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

10. Claims 24-27 rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 24 recites “access model facility types based on the first set of generic classes” which has at least two interpretation. A first is that the access is based on the first set of generic classes; while a second is that the model facility types are based on the first set of generic classes. Similar ambiguity exists regarding the phrase “access model named attribute types based on the second set of generic classes.”

The steps of claim 24 are disconnected and do not clearly define a method. The “define” step ambiguously implies some relationship between “model facility types and model named attribute types” and “the class hierarchy,” however that relationship is unclear. The two “access” steps appear to produce no discernible result or contribution to the method.

Claims 25-27 stand rejected by virtue of their dependence.

#### ***Claim Rejections - 35 USC §§ 102 & 103***

The previous rejections under 35 U.S.C. §§ 102 and 103 are withdrawn in response to the amendments to the claims. Applicants’ arguments have been fully considered and have been found persuasive as directed to the amended claim language. The prior art of record fails to teach or suggest the claimed inventions for the reasons set forth below.

#### ***Allowable Subject Matter***

Claims 10, 11, 13, 16, 18, and 25 are objected to for minor informalities.

Claims 1-4 and 6-9 are allowable dependent upon the manner in which the rejection under 35 U.S.C. § 101 is overcome.

Claims 13, 16-20, and 22-23 are allowable.



A search of the prior art fails to teach or suggest to a person of ordinary skill in the art the following subject matter recited by the independent claims:

(Claim 1) A computer system comprising [...] a file that defines model facility types based on the first set of generic classes and that defines model named attribute types based on the second set of generic classes [...] and create facility instances from model facility types and named attribute instances from model named attribute types;

(Claim 10) A computer-implemented method of simulating transport phenomena in a facility network [...] comprising building a model comprising a facility network, wherein the facility network comprises facility instances formed from model facility types based on a first set of generic classes and named attribute instances formed from model named attribute types based on a second set of generic classes, and wherein a data definitions file defines the model facility types and the model named attributes types;

(Claim 13) A computer-implemented method of simulating transport phenomena in a model of a physical system comprising a hydrocarbon-bearing reservoir penetrated by a plurality of wells [...] comprising [...] using facility instances created from model facility types and named attribute instances created from model named attribute types to model the nodes and connections [...] wherein a data definitions file defines model facility types based on a first set of generic classes and defines model named attribute types based on a second set of generic classes;

(Claim 16) A computer implemented method of modeling a hydrocarbon system comprising [...] providing model facility types created from the first set of generic classes; providing model named attribute types that are associated with at least one of the model facility

types and created from the second set of generic classes; providing a data definitions file to define model facility types and model named attribute types;

in combination with the other recited elements of these claims.

Claims 24-27 are rejected under 35 U.S.C. §§ 101 and 112. The nature of the rejection under § 112 precludes a clear determination of allowability. It would be improper to reject these claims under 35 U.S.C. §§ 102 or 103 based upon a speculative interpretation of the claim language. These claims may be allowable dependent upon the manner in which the rejections under 35 U.S.C. §§ 101 and 112 are overcome.

### ***Conclusion***

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

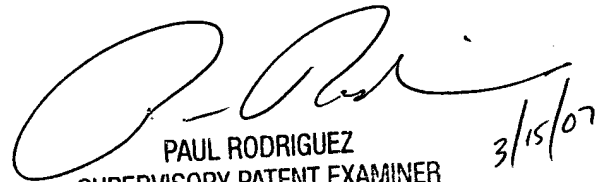
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jason Proctor whose telephone number is (571) 272-3713. The examiner can normally be reached on 8:30 am-4:30 pm M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paul Rodriguez can be reached at (571) 272-3753. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Any inquiry of a general nature or relating to the status of this application should be directed to the TC 2100 Group receptionist: 571-272-2100. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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3/15/07